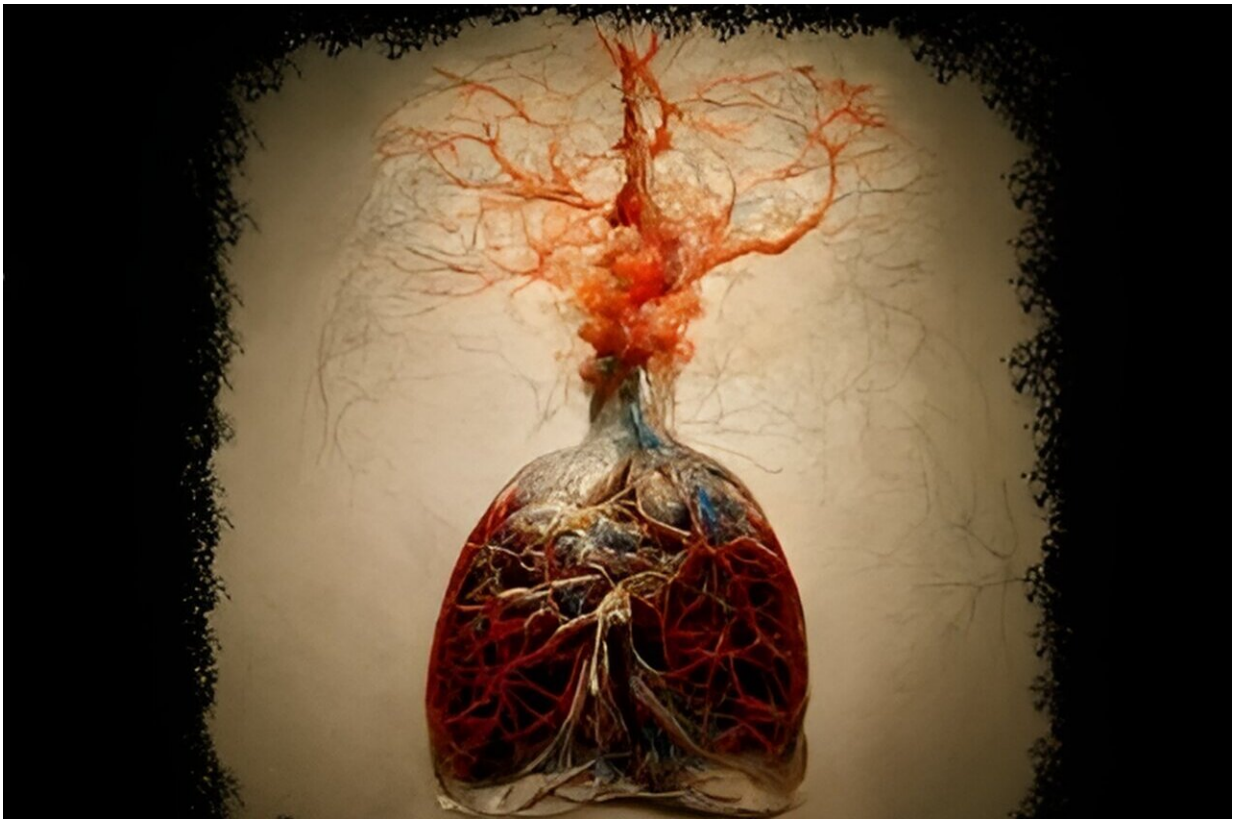


How slower breathing really helps against stress

December 13 2023, by Rianne Lindhout



PhD thesis: Roderik Gerritsen. Credit: Leiden University

People who are often stressed can feel calmer by making certain adjustments to their breathing. Possibly this also positively affects concentration and attention. Psychologist Roderik Gerritsen studied the

effects of breathing differently and explained them. Gerritsen received his Ph.D. on 13 December.

Breathing therapy is fairly common these days. People experience positive effects when dealing with stress and anxiety, but in science there was hardly any attention for this. Roderik Gerritsen changed that. Yet that was not the intention when he started his [Ph.D. research](#). "Many studies have been done on meditation, from Zen meditation to loving kindness and [transcendental meditation](#). These report positive effects on physical and [mental health](#). My question was: what leads to those effects?"

Studying all that research, Gerritsen missed something. "I suddenly thought: why is nobody talking about [breathing](#)? In all those meditation forms, your breathing also changes, but nobody brought that up."

Gerritsen got into it, and came up with a possible explanation for the effects of breathing differently. For instance, paying attention to your breathing, which is usually done in meditation, activates the [parasympathetic nervous system](#). This is the part of your nervous system that causes organs to enter a state of rest and recovery. With slower breathing, often a result of breathing with attention, your heart rate drops. In fact, this is the way you tell your body not to react to threats.

Reduction in stress levels can do a lot for body and mind

As a [cognitive psychologist](#), Gerritsen was particularly curious whether breathing differently can bring improvements at the cognitive level, such as attention, concentration, planning and keeping yourself to that planning. Not enough research has been done on this yet, Gerritsen emphasizes, but he can imagine that it works. "These breathing patterns

put you in a relaxed state that allows for greater mental flexibility in various contexts."

Apart from literature research, Gerritsen also conducted experiments himself with groups of elderly people doing tai chi, for example. "Not much came out of that, it was before I came up with the theory on the background of the effects of breathing. Now I would really like to do experiments with people who get as close as possible to a certain breathing rhythm, for example by having them look at a little ball that grows and shrinks at the desired breathing rhythm."

It is difficult to then investigate [long-term effects](#) as well, but that will certainly happen after Gerritsen's inception. "Other labs are already taking it up."

Practice at a quiet moment first

Does Gerritsen have any advice, can we all work on our breathing?

"People who often feel stressed or have burnout can definitely benefit from changing their breathing." In that case, they need to practice it at calm moments first, otherwise it can actually increase stress. Some students who practiced belly breathing for the first time in one of my experiments found it difficult and stressful. So practice quietly first, and focus first on a fairly low frequency of breathing.

"Breathe slowly and deeply, about six times a minute, so ten seconds per breath. If you do this regularly, the frequency of your basic breathing also drops, and that lowers stress."

If you have mastered slower breathing a bit, you can try it in situations where you notice you are stressed. "That low frequency is the most important thing. In addition, you can try to make the exhaling take a little longer than the inhaling."

That makes for a greater variation in your heart rate variation (hrv) and that is healthy. It also activates that calming parasympathetic nervous system more. "Finally and really less important than the [low frequency](#), it's interesting to pay [attention](#) to the fact that your belly expands when breathing in and not your chest."

More information: Ph.D. research: [Contemplations into respiration: Effects of breathing and meditative movement on body and mind](#)

Provided by Leiden University

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